APPENDIX 19

METHODS OF COMPUTING AFFECTED AREA

1. Spring developments

a. $\frac{(a+b+c)}{d}$ = area affected by development = **1.0 acre**

where a = 40,000 square feet; 200 feet by 200 feet area fenced around the spring to prevent damage from livestock,

b = 1,200 square feet; 60 feet of pipeline with a 20 foot width of disturbance for installation with a backhoe,

c = 28 square feet area displaced by a trough 2 feet in width by 14 feet in length,

d = 43,560 square feet, the number of square feet in one acre.

b. $\frac{\pi r^2}{d}$ = acres disturbed by "sacrifice area" = **1.6 acres**

where π = 3.14 and r^2 = 50 yards (150 feet), the radius of the "sacrifice area,"

d = 43,560 square feet, the number of square feet in one acre

c. Total affected area for the spring development would be 1.0 acre + 1.6 acres = **2.6 acres.**

2. Water Well Developments

a.$\frac{(a+b+2c+d)}{e}$= area affected by development = **.2 acre**

where a = 5,000 square feet; affected area by well and storage tank,

b = 28 square feet; a water trough 2 feet in width by 14 feet in length,

c = 1,000 square feet; 50 feet of pipeline with a 20 foot width of disturbance for installation with a backhoe,

d = 2,500 square feet; 50 feet by 50 feet affected area of an overflow pond,

e = 43,560 square feet, number of square feet in one acre.

b. $\frac{\pi r^2}{d}$ = acres disturbed by "sacrifice area" = **1.6 acres**

where π = 3.14 and r^2 = 50 yards (150 feet), the radius of the "sacrifice area,"

d = 43,560 square feet, the number of square feet in one acre.

c. Total acres affected by a water well development would be .2 acres + 1.6 acres = **1.8 acres**.

3. Fencing - BLM three-wire cattle fence and riparian pasture fence

$\frac{axb}{c}$ = total affected area = **1.5 acres/mile**

where a = 12 feet, this includes a two=tracked trail, produced by motor vehicles, on each side of the fence.

b= 5,280 feet, the number of feet in one mile.

c = 43,560 square feet, the number of square feet per acre.
a. 12 feet/mile x 5,280 feet/mile = 63,360 square feet/mile ÷ 43,560 square feet/acre = 1.45 acres/mile

4. Pasture Boundary signs

Assumed to be 5 percent of the total affected area, the BLM three-wire cattle fence requires repeated travel along the previously constructed fence, thus causing additional disturbances. Construction of a pasture boundary fence would require a single trip, thus causing a minimal amount of disturbance. Partial construction of the Stratton Rim Pasture Boundary Fence would take place along an existing road; therefore, the disturbance to the area would already have taken place.

5. Cattleguards

All proposed cattleguards would be constructed on an existing road; therefore, no additional disturbance would take place.

6. Artesian Well (wetland fencing)

a. 600 feet x 6 feet = 3,600 square feet
600 feet x 12 feet = 7,200 square feet
10,800 square feet ÷ 43,560 square feet/acre =
0.2 acres on fenceline

b. 200 feet x 200 feet = 40,000 square feet ÷ 43,560 square feet/acre =
0.9 acres inside permanent exclosure.

7. Pipelines

1 foot x 5,280 feet/mile = 5,280 square feet/mile ÷ 43,560 square feet/acre = **0.1 acre/mile)**